# ILLINOIS NATURAL HISTORY SURVEY

## T E C H N I C A L  R E P O R T

# Botanical Survey and Assessment of the Eola Rd./Interstate-88 Interchange Study Area, Du Page County, Illinois

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## INTRODUCTION

A request was received in December of 2007 for botanical surveys to be conducted within the proposed Eola Rd./Interstate-88 interchange study area, located in Du Page County, Illinois. Survey boundaries were variable and included roadside areas parallel to Interstate-88, as well as larger areas within the vertical angles of the intersection of Interstate-88 and Eola Rd. Survey boundaries are shown in Figure 1.

The entire study area occurs in the Morainal Section of the Northeastern Morainal Natural Division (Schwegman 1973). This area is characterized by undulating topography resulting from glacial materials deposited in this region during the late stages of the Wisconsinan glaciation, approximately 13,000 to 15,000 years ago (Pielou 1991, Wiggers 1997). Presettlement vegetation communities occurring in this section included various forest types (e.g., dry, mesic and wet upland forest, floodplain forest, and tamarack swamp), dry, mesic, and wet prairie, fen, marsh, sedge meadow, savanna, and bog (Schwegman 1973, Swink and Wilhelm 1994). Soils within the survey boundaries are silty loams and silty clay loams that range from well drained to poorly drained, and were formed in level to gently sloping areas of glacial outwash (Mapes 1979).

## METHODS

Botanical surveys were conducted between 22 May 2008 and 14 August 2008, with the search emphasis on threatened and endangered plant species and/or high quality natural communities. Searches specifically focused on locating potential *Plantanthera leucophaea* populations were conducted on three non-consecutive days between 28 June and 11 July. Cumulative species lists were compiled for all community types/plant associations encountered. Numerous plant specimens were collected and preserved for laboratory examination with GPS coordinates taken at all collection locations. Digital photographs were taken and/or voucher specimens collected for threatened or endangered plant species that were encountered. Population parameters for threatened or endangered species were determined by one or more of the following methods: 1) determining total number of individuals (genets – genetically distinct individuals) for non-rhizomotous and non-stoloniferous species, 2) estimating total number of flowering/fruiting stems (potential ramets – genetically identical individuals) for rhizomotous and stoloniferous species, and 3) estimating total population area occupied based on digitized aerial photographs. Collected specimens are deposited in the Illinois Natural History Survey Herbarium (ILLS), in Champaign, Illinois. Community classification and grades of natural quality follow White (1978). Grades of natural quality are as follows:

Grade A: Relatively stable or undisturbed communities
Grade B: Late successional or lightly disturbed communities
Grade C: Mid-successional or moderately to heavily disturbed communities
Grade D: Early successional or severely disturbed communities
Grade E: Very early successional or very severely disturbed communities

Data from historic collections of threatened and endangered species were checked in the vPlants database (vPlants 2008), which includes collections from the Field Museum of Natural History (F), the Morton Arboretum (MOR), and the Chicago Botanic Garden (CHIC). Botanical

nomenclature throughout the report follows Taft et al. (1997). If not specifically indicated, scientific names followed by an asterisk (*) denote vascular plants that are adventive to this region.

## RESULTS AND DISCUSSION

### Threatened and Endangered Plants

One vascular plant species listed as state endangered by the Illinois Endangered Species Protection Board was found in the survey corridor - *Scirpus paludosus* A. Nelson (alkali bulrush). Only one population of the alkali bulrush was located within the survey corridor (Figure 2; Appendix 1). This population was located in a wet roadside ditch along Interstate-88, and occupied an estimated 60 $m^2$ (646 $ft.^2$). Within this population, there were an estimated 900 flowering/fruiting stems. Details of this population will be discussed in the following section.

***Scirpus paludosus* A. Nelson** (alkali bulrush) CYPERACEAE – State endangered.

The alkali bulrush (Figure 3 A&B) is a rhizomotous, colony-forming perennial sedge that inhabits various, often saline, wetland areas such as marshes, shores, and lake margins (Gleason and Cronquist 1991, Smith 2002), and can tolerate alkaline environments with a pH up to 9.0 (USDA, NRCS 2008). Additionally, this species can survive short periods of complete inundation and is reported to grow well when the water table is within 10 cm of the soil surface (USDA, NRCS 2008). *Scirpus paludosus* occurs throughout a wide geographic range, including North America, South America, Central America, and the Hawaiian Islands (Smith 2002). In North America, *S. paludosus* is distributed throughout much of Canada, and within the United States, is known to occur in Illinois, Michigan, all states west of the Mississippi River (except Arkansas and Louisiana), and several northeastern states (Smith 2002).

The alkali bulrush was apparently first discovered in the Chicago region in 1950 (INPN |1970s|, vPlants 2008), occurring as an extensive colony in a roadside ditch in Cook County (Swink 1969), but was noted as being much reduced in size by the late 1970s (Swink and Wilhelm 1979). In 1981, a population was reported from a natural salt marsh in La Salle County, and was believed to be indigenous at this site (Sheviak 1981). The La Salle County population is the basis for listing the alkali bulrush as a state endangered species. By 1994, the alkali bulrush was reported from three counties within the Chicago region – Cook, Grundy, and Lake, and these populations were all noted as being adventive (Swink and Wilhelm 1994). To date, there are eight counties from which the alkali bulrush is documented in Illinois – Boone, Cook, Du Page, Grundy, Kane, La Salle, Lake, and McHenry (Swink and Wilhelm 1994, Herkert and Ebinger 2002, Murphy 2005, 2006, 2007), and all of these populations (except the La Salle County population) occurred in roadside ditches. Additionally, Swink and Wilhelm (1994) and Smith (2002) note that the accumulation of road-deicing salts in these roadside ditches contributes to the occurrence and spread of this taxon in these environments. Synonymous names for the alkali bulrush include *Bolboshoenus maritimus* (L.) Palla, *Bolboshoenus maritimus* (L.) Palla subsp. *paludosus* (A. Nelson) T. Koyama, *Scirpus maritimus* L. var. *paludosus* (A. Nelson) Kükenth., and *Scirpus pacificus* Britt. (Smith 2002, USDA, NRCS 2008).

One population of *Scirpus paludosus* was located within the survey area (Figure 2), occurring in a wet roadside ditch along the westbound lanes of Interstate-88 (Figure 3 A&B; Appendix 1). This population occupied an estimated area of 60 m² (646 ft.²), with an estimated 900 total flowering/fruiting stems. The wet roadside ditch habitat in which this population occurred, was dominated by species adventive to the region, and included *Aster subulatus*, Echinochloa crus-galli*, Festuca arundinacea*, Hordeum jubatum*, Leptochloa fascicularis*, Phalaris arundinacea*, Rumex crispus*,* and *Typha angustifolia** (see also Appendix 1).

## Natural and Cultural Community Descriptions

Only two areas within the survey boundaries represented naturally occurring community types. The first was a highly degraded marsh habitat on the southeast corner of the intersection of Eola Rd. and Diehl Rd. (Figure 2). The second was a small, highly degraded (grade D) mesic savanna, immediately north of Diehl Rd. (Figure 2). All other areas within the survey boundaries were represented by cultural communities; these included: agricultural land, artificial ponds, developed land, reconstructed prairie, reconstructed marsh, roadside areas, successional wooded areas, and successional wet meadows. Natural and cultural vegetation community types will be discussed in the following sections.

### Natural Communities

#### Marsh

Only one natural marsh habitat occurred within the survey boundaries, and was located at the intersection of Eola Rd. and Diehl Rd. (Figure 2). This marsh area was highly degraded (grade D/E) and dominated by nearly solid stands of either *Typha angustifolia* (narrow-leaf cattail) or *Phragmites australis* (common reed). On its margins, this marsh habitat intergraded with successional wooded areas, successional wet meadow, and old-field areas.

#### Mesic Savanna

One remnant mesic savanna occurred within the survey boundaries, and was located on the southwestern edge of the survey corridor (Figure 2). This savanna remnant was highly degraded (grade D), and was surrounded on all sides by cultural communities (i.e. developed land, artificial ponds, and agricultural/old-field areas). The overstory in this remnant savanna was dominated by *Quercus bicolor* (swamp white oak), with *Fraxinus pennsylvanica* var. *subintegerrima* (green ash) as the subdominant. Infrequent overstory species included *Prunus serotina* (black cherry), *Quercus macrocarpa* (bur oak), and *Q. rubra* (red oak). Oak individuals in this area ranged in size from 55.0 cm to 117.0 cm DBH (diameter at breast height), with many ranging between 80.0 cm and 100.0 cm DBH. In most areas the ground flora was sparse, and when present, adventive species and native ruderal species were dominant. Additional descriptions are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent - see also Appendix 2):

**(mesic savanna continued)**

Understory

*Acer negundo - 3*
*Acer saccharinum - 1*
*Acer saccharum - 2*
*Carya cordiformis - 1-2*
*Celtis occidentalis - 2*
*Fraxinus pennsylvanica v. subintegerrima - 3*
*Juglans nigra - 1*
*Ostrya virginiana - 2-3*
*Populus deltoides - 2-3*
*Prunus serotina - 2*
*Rhamnus cathartica* - 2-3*
*Tilia americana - 2-3*
*Ulmus americana - 3-4*

Shrubs and woody vines

*Berberis thunbergii* - 1-2*
*Cornus racemosa - 2*
*Eleagnus angustifolia* - 1*
*Eleagnus umbellata* - 2*
*Lonicera* X *bella* - 2-3*
*Lonicera maackii* - 3*
*Menispermum canadense - 4*
*Parthenocissus quinquefolia - 4*
*Prunus virginiana - 4*
*Rhamnus cathartica* - 4*
*Rhamnus frangula* - 2-3*
*Rhus glabra - 2*
*Rhus typhina - 2*
*Ribes americanum - 2*
*Ribes missouriense - 1-2*
*Rosa multiflora* - 2*
*Rubus occidentalis - 3-4*
*Sambucus canadensis - 3*
*Solanum dulcamara* - 2*
*Toxicodendron radicans - 4-5*
*Viburnum opulus* - 2-3*
*Vitis riparia - 5*
*Zanthoxylum americanum - 2-3*

Ground flora

*Alliaria petiolata* - 4-5*
*Ambrosia trifida - 2*
*Arctium minus* - 3*
*Arisaema triphyllum - 3*
*Aster lateriflorus - 3*
*Aster pilosus - 2-3*
*Bidens frondosa - 3*
*Campanula americana - 3*
*Chenopodium albidum* - 2-3*
*Circaea lutetiana - 3-4*
*Dioscorea villlosa - 2*
*Erichtites hieracifolia - 2*
*Fragaria virginiana - 2*
*Geum canadense - 4*
*Geranium maculatum - 2-3*
*Hackelia virginiana - 3*
*Hypericum punctatum - 2*
*Leersia virginica - 2-3*
*Lysimachia ciliata - 2*
*Nepeta cataria* - 2*
*Oxalis stricta - 3*
*Polygonum virginianum - 3*
*Ranunculus septentrionalis - 3-4*
*Sanguinaria canadensis - 3*
*Sanicula gregaria - 3*
*Smilax lasioneuron - 2*
*Solanum ptycanthum - 2-3*
*Solidago canadensis - 3-4*
*Solidago gigantea - 2-3*
*Teucrium canadense - 2*

## Cultural Communities

### Agricultural Land

Approximately one-half of the survey area was represented by agricultural land. The majority of this area was left idle during the 2008 growing season, and a smaller portion was planted in *Glycine max* (soybeans). Species growing in this cultural community type are listed in Appendix 2.

**Artificial Ponds**

Artificial ponds were occasional within the survey area. These areas were surrounded by agricultural land, developed land, and/or successional wet meadow/old-field areas. Dominant species immediately adjacent to these pond areas were adventive and/or native ruderal species. A complete list of species for this cultural community type is given in Appendix 2.

**Reconstructed Prairie**

Reconstructed prairie areas occurred in the northwest corner of the survey corridor, and were interspersed with, and surrounded, four reconstructed marshes in this area (see Figure 2). These planted prairie areas were dominated by adventive species as well as native ruderal species; these included (see also Appendix 2):

*Ambrosia artemisiifolia*
*Aster pilosus*
*Bromus inermis**
*Dactylis glomerata**
*Erigeron annuus*
*Eupatorium altissimum*
*Festuca arundinacea**
*Melilotus alba**
*Melilotus officinalis**
*Pastinaca sativa**
*Poa pratensis**
*Solidago canadensis*

Prairie species interspersed with the above species included (see also Appendix 2):

*Andropogon gerardii*
*Amorpha canescens*
*Dodecatheon meadia*
*Echinacea purpurea*
*Eryngium yuccifolium*
*Heliopsis helianthoides*
*Monarda fistulosa*
*Panicum virgatum*
*Ratibida pinnata*
*Schizachyrium scoparium*
*Solidago rigida*
*Sorghastrum nutans*
*Silphium laciniatum*
*Silphium terebinthinaceum*

**Reconstructed Marsh**

As previously noted, there were four reconstructed marsh areas in the northwest corner of the survey corridor that were interspersed with areas of planted prairie. The two most dominant species in these marsh habitats were *Phalaris arundinacea** (reed canary grass) and *Typha angustifolia** (narrow-leaf cattail). Other species characteristic of marsh habitats included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent - see also Appendix 2):

*Agrostis alba - 3-4*
*Alisma plantago-aquatica - 3*
*Asclepias incarnata - 3*
*Aster simplex - 3-4*
*Bidens aristosa - 3*
*Bidens frondosa - 3-4*
*Boltonia asteroides - 3*
*Carex vulpinoidea - 2-3*
*Ceratophyllum demersum - 4*
*Eleocharis palustris - 4*
*Eupatorium perfoliatum - 2*
*Eupatorium serotinum - 3*
*Geum laciniatum - 2-3*
*Juncus dudleyi - 3*
*Leersia oryzoides - 3*
*Lemna minor - 3-4*
*Lycopus americanus - 3*
*Mimulus ringens - 2*
*Nymphaea odorata - 3*
*Penthorum sedoides - 2*
*Polygonum amphibium - 3*
*Polygonum pensylvanicum - 2-3*
*Pontederia cordata - 3*
*Potamogeton pectinatus - 3*
*Potamogeton pusillus - 3-4*
*Sagittaria latifolia - 2-3*
*Salix exigua - 4*
*Salix nigra - 2-3*
*Scirpus acutus - 3*
*Scirpus atrovirens - 3*
*Scirpus tabernaemontanii -3*
*Sparganium eurycarpum - 3*
*Spartina pectinata - 2*
*Verbena hastata - 2-3*
*Wolffia braziliensis - 3-4*
*Wolffia punctata - 3-4*

**Roadside Areas**

All roadside habitats were dominated by plants adventive to the region and/or native ruderal species. Species occurring in roadside areas included (~ = wet areas; + = dry/drier areas) (see also Appendix 2):

*+ Achillea millefolium**
*~ + Agropyron repens**
*~ Agrostis alba**
*+ Ambrosia artemisiifolia*
*~ Apocynum sibiricum*
*+ Asclepias syriaca*
*+ Asclepias verticillata*
*+ Aster pilosus*
*~ Aster subulatus**
*~ Atriplex patula**
*+ Bromis inermis**
*+ Cichorium intybus**
*~ + Cirsium arvense**
*+ Convolvulus arvensis**
*+ Daucus carota**
*~ + Dipsacus laciniatus**
*+ Dyssodia papposa**
*~ Echinochloa crus-galli**
*~ Equisetum hyemale*
*+ Eupatorium altissimum*
*~ Eupatorium serotinum*
*~ + Festuca arundinacea**
*~ Hordeum jubatum**
*~ Juncus compressus**
*~ Leptochloa fascicularis**
*~ Lythrum salicaria**
*+ Medicago lupulina**
*+ Melilotus alba**
*+ Melilotus officinalis**
*+ Pastinaca sativa**
*~ Phalaris arundinacea**
*~ Phragmites australis**
*+ Plantago lanceolata**
*~ + Plantago rugelii*
*+ Poa pratensis**
*~ Puccinellia distans**
*~ Rumex crispus**
*~ Scirpus atrovirens*
*~ **Scirpus paludosus***
*~ Scirpus tabernaemontanii*
*~ Solanum dulcamara**
*~ + Solidago canadensis*
*~ Solidago sempervirens**
*~ + Sonchus arvensis**
*~ + Suaeda depressa**
*~ + Taraxacum officinale**
*+ Trifolium pratense**
*+ Trifolium repens**
*~ Typha angustifolia**

**Successional Wooded Areas**

Successional wooded areas were occasional within the study area. Historically, before settlement of this region, these areas were prairies and associated communities. Subsequent to settlement, these habitats were converted to agriculture and/or pastureland. In recent decades, these areas have undergone extensive woody species encroachment and are now characterized by more closed canopy conditions and the near complete loss of their presettlement floristic composition. These areas were characterized by the following conditions: 1) moderate to dense growth of large and small trees, shrubs and/or woody vines, 2) greatly reduced floristic diversity - often with abundant bare ground/leaf litter, and 3) dominant vegetation consisting of exotic species and/or native ruderal species. Further descriptions of these areas are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent - see also Appendix 2):

<u>Overstory</u> (when present)

*Acer negundo - 4-5*
*Acer saccharinum - 4-5*
*Fraxinus pennsylvanica* v. *subintegrrima -4-5*
*Populus deltoides - 3*
*Prunus serotina - 3-4*
*Salix amygdaloides - 2-3*
*Salix nigra - 3*
*Tilia americana - 2*
*Ulmus pumila* - 3*

**(successional wooded areas continued)**

Understory, or small, young growth

*Acer negundo - 4-5*
*Acer saccharinum - 3-4*
*Crataegus mollis - 2-3*
*Fraxinus pennsylvanica* v. *subintegerrima - 4*
*Juniperus virginiana - 2*
*Morus alba* - 3-4*
*Populus deltoides - 2-3*
*Prunus serotina - 4*
*Rhamnus cathartica* - 4-5*
*Salix amygdaloides - 1-2*
*Salix nigra - 1-2*
*Ulmus americana - 3*
*Ulmus pumila* - 2*

Shrubs and Woody Vines

*Cornus racemosa - 4*
*Eleagnus angustifolia* - 2*
*Eleagnus umbellata* - 3-4*
*Lonicera* X *bella* - 4*
*Lonicera maackii* - 4*
*Lonicera tartarica* - 3*
*Parthenocissus quinquefolia - 4*
*Rhamnus cathartica* - 4*
*Rhamnus frangula* - 3*
*Rhus glabra - 2-3*
*Rosa multiflora* - 3*
*Rubus occidentalis - 3*
*Rubus pensylvanicus - 3*
*Salix exigua - 4*
*Sambucus canadensis - 2*
*Smilax hispida - 1-2*
*Solanum dulcamara* - 2-3*
*Toxicodendron radicans - 4*
*Viburnum lentago - 1-2*
*Viburnum opulus* - 2*
*Viburnum recognitum* - 2*
*Vitis riparia - 4-5*

Ground Flora

*Acalypha rhomboidea - 3*
*Alliaria petiolata* - 3*
*Ambrosia trifida - 3*
*Arctium minus* - 4*
*Aster lateriflorus - 2*
*Bidens frondosa - 2*
*Carex blanda - 2-3*
*Circaea lutetiana* v. *canadensis - 3*
*Cirsium arvense* - 3*
*Dactylis glomerata* - 3*
*Daucus carota* - 2*
*Erechtites hieracifolia - 3*
*Erigeron annuus - 3*
*Erythronium albidum -1*
*Eupatorium rugosum - 3*
*Festuca arundinacea* - 3*
*Galium aparine - 4*
*Galium triflorum - 2*
*Geum canadense - 4-5*
*Glechoma hederacea* - 4*
*Hackelia virginiana - 3*
*Hesperis matronalis* - 2*
*Hydrophyllum virginianum - 1*
*Juncus tenuis - 3*
*Nepeta cateria* - 3*
*Oxalis stricta - 3*
*Phalaris arundinacea* - 3*
*Plantago rugelii - 3*
*Poa compressa* 3*
*Poa pratensis* - 4*
*Polygonatum commutatum - 1*
*Prunella vulgaris* v. *elongata - 3*
*Ranunculus arbortivus - 1-2*
*Sanicula canadensis - 1-2*
*Sanicula gregaria - 3*
*Solidago canadensis - 3*
*Taraxacum officinale* - 3*
*Teucrium canadense* v. *virg. - 2*
*Trillium recurvatum - 1*
*Verbena urticifolia - 3*
*Viola pratincola - 3*
*Viola sororia - 3*

**Successional Wet Meadow**

Successional wet meadows were occasional in the survey area, and occurred in scattered locations. These areas often intergraded with successional wooded areas, and in one location, a highly degraded marsh, and in another location, a drainage ditch. Dominant species in these habitats included *Festuca arundinacea** (tall fescue), *Phalaris arundinacea** (reed canary grass), *Poa pratensis** (Kentucky bluegrass), and *Solidago canadensis* (tall goldenrod). Woody species encroaching in these areas included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent - see also Appendix 2):

*Acer negundo - 4*
*Cornus obliqua - 2*
*Cornus racemosa - 4*
*Eleagnus umbellata* - 3*
*Fraxinus pennsylvanica v. subintegerrima - 4*
*Lonicera* X *bella* 4-5*
*Lonicera maackii* - 4*
*Morus alba* - 3-4*
*Prunus serotina - 3*
*Rhamnus cathartica* - 3*
*Rhamnus frangula* - 3*
*Ribes americanum - 2-3*
*Rosa multiflora* - 3*
*Rubus occidentalis - 3*
*Rubus pensylvanicus - 3*
*Salix exigua - 4*
*Toxicodendron radicans - 4*
*Vitis riparia - 4*

Other ground flora species characteristic of successional wet meadow areas included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent - see also Appendix 2):

*Acalypha rhomboidea - 3*
*Agalinis purpurea - 1-2*
*Agrostis alba - 3*
*Agrostis alba* v. *palustris - 3*
*Alisma plantago-aquat.* v. *par. - 2*
*Ambrosia trifida - 2-3*
*Apocynum sibiricum - 3*
*Asclepias incarnata - 1-2*
*Bidens frondosa - 3*
*Calystegia sepium - 3-4*
*Carex cristatella - 2*
*Carex granularis - 2-3*
*Carex vulpinoidea -2-3*
*Cirsium arvense* - 3-4*
*Daucus carota* - 3*
*Echinochloa crus-galli* - 2-3*
*Eleocharis palustris - 2*
*Equisetum arvense - 3*
*Erechtites hieracifolia - 2*
*Eupatorium serotinum - 2-3*
*Geum laciniatum - 2*
*Juncus dudleyi - 2-3*
*Juncus tenuis - 3*
*Juncus torreyi - 2*
*Lycopus americanus - 2*
*Melilotus alba* - 3*
*Melilotus officinalis* - 3*
*Phyla lanceolata - 2*
*Plantago rugelii - 3*
*Polygonum pensylvanicum - 2*
*Polygonum persicaria* - 3*
*Prunella vulgaris* v. *elongata - 3*
*Sagittaria latifolia - 2*
*Scirpus americanus - 1-2*
*Scirpus pendulus - 2*
*Solanum dulcamara* - 2*
*Solidago gigantea - 3*
*Sonchus arvensis* - 3*
*Trifolium hybridum* - 2-3*
*Verbena hastata - 2*

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Figure 1) Aerial photograph showing botanical survey boundaries for the Illinois State Toll Highway Authority Eola Rd./I-88 interchange study area, Du Page County, Illinois.

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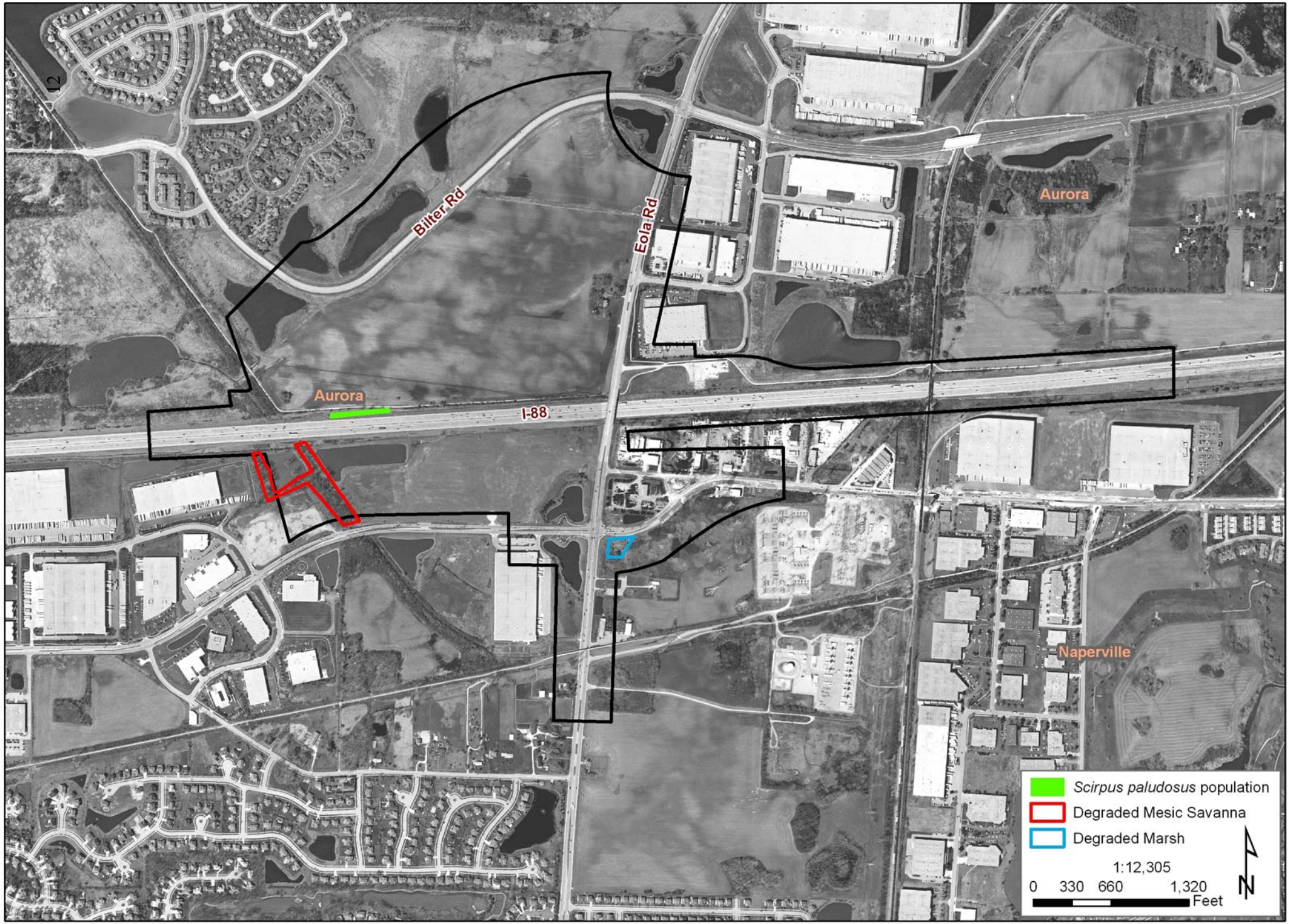


Figure 2) Aerial photograph showing botanical survey boundaries, locations of natural community types, and location of the state endangered *Scirpus paludosus* (alkali bulrush), in the Illinois State Toll Highway Authority Eola Rd./I-88 interchange study area, Du Page County, Illinois.

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**Figure 3. A** - Photograph of *Scirpus paludosus* (alkali bulrush) along Interstate-88, growing in a wet roadside ditch, Du Page Co., Illinois. Blue boxes highlight a portion of this population. **B** - Close-up photograph of an inflorescence within this population.

**A.**

**B.**

**Appendix 1.** Threatened and endangered species Element Occurrence Record for *Scirpus paludosus* , Du Page County, Illinois.

| | |
|---|---|
| **Taxon:** *Scirpus paludosus* A. Nelson | **Status:** State Endangered |
| **Project Area:** ISTHA Interstate-88/Eola Rd. interchange study area. | **County:** Du Page |
| **Date:** 14 August 2008 | |
| **Distance from Edge of Pavement:** Approximately 10.0 m (32.8 ft.) | **Population Size:** Approximately 900 fruiting culms |

**Reproductive State:** Fruiting

**Latitude:** (eastern starting point) 41.80087° N; (western ending point) 41.80071° N
**Longitude:** (eastern starting point) -088.24697° W; (western ending point) -088.24881° W (WGS84/NAD83)
**Voucher:** Yes (*Murphy #3204* - ILLS) **Photograph:** Yes

**Community Description:**

**Natural Community:** Cultural - Developed land (moist/wet roadside ditch)

**Associate Species:** *Aster subulatus*, Cyperus esculentus, Echinochloa crus-galli*, Festuca arundinacea*, Hordeum jubatum*, Leptochloa fascicularis*, Phalaris arundinacea*, Rumex crispus*,* and *Typha angustifolia*.*

**Comments: (Population #1) -** Occurring along westbound lanes of I-88.

**Appendix 2.** Cumulative list of vascular plant species encountered in the Eola Rd./I-88 interchange study corridor, Du Page County, Illinois. Community abbreviations are as follows: **AOF** = agricultural land & old-field areas; **RA** = roadside areas; **AP** = artificial ponds; **SW** = successional wooded areas; **SWM** = successional wet meadow; **PP** = planted prairie; **RM** = reconstructed marsh; and **S** = mesic savanna. Additional abbreviations are as follows: **C** = coefficient of conservatism; **W** = numeric wetness values associated with wetland categories (see end of appendix 2); **Wetness** = wetland classification category (see end of appendix 2); **Physiog.** = physiognomy (combination of structural attributes, life history and taxonomic classification). Single letter prefixes accompanying Forb, Grass, Sedge, or Vine classifications are as follows: A = annual, H= herbaceous, P = perennial, W = woody. Relative frequency of occurrence: 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent. Taxa with scientific names in all capital letters are adventive to the region.

| | | | | | | |
|---|---|---|---|---|---|---|
| FLORISTIC QUALITY DATA | Native | 178 | 71.5% | Adventive | 71 | 28.5% |
| 178 NATIVE SPECIES | Tree | 22 | 8.8% | Tree | 4 | 1.6% |
| 249 Total Species | Shrub | 15 | 6.0% | Shrub | 10 | 4.0% |
| 3.0 NATIVE MEAN C | W-Vine | 6 | 2.4% | W-Vine | 1 | 0.4% |
| 2.2 W/Adventives | H-Vine | 2 | 0.8% | H-Vine | 0 | 0.0% |
| 40.2 NATIVE FQI | P-Forb | 77 | 30.9% | P-Forb | 20 | 8.0% |
| 34.0 W/Adventives | B-Forb | 4 | 1.6% | B-Forb | 11 | 4.4% |
| -0.7 NATIVE MEAN W | A-Forb | 23 | 9.2% | A-Forb | 14 | 5.6% |
| 0.0 W/Adventives | P-Grass | 12 | 4.8% | P-Grass | 9 | 3.6% |
| AVG: Faculative (+) | A-Grass | 2 | 0.8% | A-Grass | 2 | 0.8% |
| | P-Sedge | 13 | 5.2% | P-Sedge | 0 | 0.0% |
| | A-Sedge | 1 | 0.4% | A-Sedge | 0 | 0.0% |
| | Fern | 1 | 0.4% | | | |

| C | Scientific Name | W | Wetness | Physiog. | Common Name | AOF | RA | AP | SW | SWM | PP | RM | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | ABUTILON THEOPHRASTI | 4 | FACU- | A-Forb | BUTTONWEED | 3 | 2 | | | | | | |
| 0 | Acalypha rhomboidea | 3 | FACU | A-Forb | THREE-SEEDED MERCURY | 3 | | 2 | 3 | 3 | | | |
| 1 | Acer negundo | -2 | FACW- | Tree | BOXELDER | | 3 | | 4-5 | 4 | 2 | | 3 |
| 1 | Acer saccharinum | -3 | FACW | Tree | SILVER MAPLE | | | | 4-5 | | | | 1 |
| 4 | Acer saccharum | 3 | FACU | Tree | SUGAR MAPLE | | | | | | | | 2 |
| 6 | Agalinis purpurea | -3 | FACW | A-Forb | FALSE FOXGLOVE | | | | | 1-2 | | | |
| 0 | AGROPYRON REPENS | 3 | FACU | P-Grass | QUACK GRASS | 3 | 5 | | | | 2 | | |
| 0 | Agrostis alba | -3 | FACW | P-Grass | RED TOP | 3 | 3 | | | 3 | 3 | 3 | |
| 8 | Agrostis alba v. palustris | -3 | FACW | P-Grass | CREEPING BENT GRASS | | 3 | | | 3 | | | |
| 2 | Alisma plantago-aquatica v. parv. | -5 | OBL | P-Forb | COMMON WATER PLANTAIN | | 2 | 1-2 | | 2 | | 3 | |
| 0 | ALLIARIA PETIOLATA | 0 | FAC | B-Forb | GARLIC MUSTARD | | | | 3 | | | | 4-5 |
| 1 | Amaranthus tuberculatus | -5 | OBL | A-Forb | TALL WATERHEMP | 2 | | | | | | 2 | |
| 0 | Ambrosia artemisiifolia | 3 | FACU | A-Forb | COMMON RAGWEED | 3 | 3 | | 3 | | 3-4 | | |
| 0 | Ambrosia trifida | -1 | FAC+ | A-Forb | GIANT RAGWEED | 3 | 3 | | 3 | 2-3 | | | 2 |
| 8 | Amorpha canescens | 5 | UPL | Shrub | LEAD PLANT | | | | | | 1 | | |
| 5 | Andropogon gerardii | 1 | FAC- | P-Grass | BIG BLUESTEM | | 1 | | | | 3 | | |
| 2 | Apocynum sibiricum | -1 | FAC+ | P-Forb | INDIAN HEMP | | 3 | 3 | | 3 | | 3 | |
| 0 | ARCTIUM MINUS | 5 | UPL | B-Forb | COMMON BURDOCK | 3 | 2 | | 4 | | | | 3 |
| 4 | Arisaema triphyllum | -2 | FACW- | P-Forb | INDIAN TURNIP | | | | 1 | | | | 3 |
| 4 | Asclepias incarnata | -5 | OBL | P-Forb | SWAMP MILKWEED | | | 1 | | 1-2 | | 3 | |
| 0 | Asclepias syriaca | 5 | UPL | P-Forb | COMMON MILKWEED | 3 | 3 | | | | 2-3 | | |
| 1 | Asclepias verticillata | 5 | UPL | P-Forb | HORSETAIL MILKWEED | | 3 | | | | 2 | | |
| 2 | Aster lateriflorus | -2 | FACW- | P-Forb | SIDE-FLOWERING ASTER | | | | 2 | | | | 3 |
| 4 | Aster novae-angliae | -3 | FACW | P-Forb | NEW ENGLAND ASTER | | 2 | | | | 2 | | |
| 0 | Aster pilosus | 4 | FACU- | P-Forb | HAIRY ASTER | 3 | 3 | | | | 3 | | 2-3 |
| 3 | Aster simplex | -5 | OBL | P-Forb | PANICLED ASTER | | | | | 2 | | 2 | |
| 0 | ASTER SUBULATUS | -5 | OBL | A-Forb | EXPRESSWAY ASTER | | 3-4 | | | | | | |
| 0 | ATRIPLEX PATULA | 2 | FACU+ | A-Forb | FAT-HEN SALTBUSH | | 4 | | | | | | |
| 0 | BARBAREA VULGARIS | 0 | FAC | B-Forb | WINTER CRESS | | | | | 3 | | | |
| 0 | BERBERIS THUNBERGII | 4 | FACU- | Shrub | JAPANESE BARBERRY | | | | 2 | | | | 1-2 |
| 1 | Bidens aristosa | -3 | FACW | A-Forb | SWAMP MARIGOLD | | | | | | | 3 | |
| 2 | Bidens connata | -5 | OBL | A-Forb | PURPLESTEMMED TICKSEED | | | | | | | 2 | |
| 1 | Bidens frondosa | -3 | FACW | A-Forb | COMMON BEGGAR'S TICKS | 3 | 2 | 3 | 2 | 3 | | 3-4 | 3 |
| 5 | Boltonia asteroides | -3 | FACW | P-Forb | FALSE ASTER | | | | | | | 3 | |

**Appendix 2 continued**

| C | Scientific Name | W | Wetness | Physiog. | Common Name | AOF | RA | AP | SW | SWM | PP | RM | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Bouteloua curtipendula | 5 | UPL | P-Grass | SIDE-OATS GRAMA | | 1 | | | | | | |
| 0 | Bromis inermis | 5 | UPL | P-Grass | HUNGARIAN BROME | | 4 | | | | 3 | | |
| 1 | Calystegia sepium | 0 | FAC | P-Forb | AMERICAN BINDWEED | | 3 | | 2 | 3-4 | 2 | 2 | |
| 4 | Campanula americana | 0 | FAC | A-Forb | AMERICAN BELLFLOWER | | | | 2 | | | | 3 |
| 2 | Carex blanda | 0 | FAC | P-Sedge | COMMON WOOD SEDGE | | 2 | | 2-3 | | | | 2 |
| 3 | Carex cristatella | -4 | FACW+ | P-Sedge | CRESTED OVAL SEDGE | | | 2 | | 2 | | 2 | |
| 2 | Carex granularis | -4 | FACW+ | P-Sedge | PALE SEDGE | | | | | 2-3 | | | |
| 5 | Carex squarrosa | -5 | OBL | P-Sedge | NARROW-LEAVED CATTAIL SEDGE | | | | | 1 | | | |
| 2 | Carex stipata | -5 | OBL | P-Sedge | COMMON FOX SEDGE | | | | | | | 1-2 | |
| 3 | Carex vulpinoidea | -5 | OBL | P-Sedge | BROWN FOX SEDGE | | | 2 | | 2-3 | | 2-3 | |
| 4 | Carya cordiformis | 0 | FAC | Tree | BITTERNUT HICKORY | | | | 2 | | | | 1-2 |
| 3 | Celtis occidentalis | 1 | FAC- | Tree | HACKBERRY | | | | 2-3 | | | | 2 |
| 0 | CENTAURIUM PULCHELLUM | 4 | FACU- | A-Forb | SHOWY CENTAURY | | 3 | | | | | | |
| 3 | Ceratophyllum demersum | -5 | OBL | P-Forb | COONTAIL | | | 2 | | | | 4 | |
| 0 | CHENOPODIUM ALBUM | 1 | FAC- | A-Forb | LAMB'S QUARTERS | 3 | 3 | | | | | | 2-3 |
| 0 | CICHORIUM INTYBUS | 5 | UPL | P-Forb | CHICKORY | | 4 | | | | | | |
| 2 | Circaea lutetiana v. canadensis | 3 | FACU | P-Forb | ENCHANTER'S NIGHTSHADE | | | | 3 | | | | 3-4 |
| 0 | CIRSIUM ARVENSE | 3 | FACU | P-Forb | FIELD THISTLE | 3 | 3 | | 3 | 3-4 | | | |
| 0 | CIRSIUM VULGARE | 4 | FACU- | B-Forb | BULL THISTLE | | | | 3 | | | | |
| 0 | CONVOLVULUS ARVENSIS | 5 | UPL | P-Forb | FIELD BINDWEED | 3 | 4 | | | | | | |
| 4 | Cornus obliqua | -5 | OBL | Shrub | PALE DOGWOOD | | | | 2-3 | 2 | | 2 | |
| 2 | Cornus racemosa | -2 | FACW- | Shrub | GRAY DOGWOOD | | | 3-4 | 4 | 4 | | | 2 |
| 0 | CORONILLA VARIA | 5 | UPL | P-Forb | CROWN VETCH | | 4 | | | | 2-3 | | |
| 2 | Crataegus crus-galli | 0 | FAC | Tree | COCK-SPUR HAWTHORN | | | | 2 | | 1 | | |
| 2 | Crataegus mollis | -2 | FACW- | Tree | DOWNY HAWTHORN | | | | 2-3 | | | | |
| 1 | Cryptotaenia canadensis | 0 | FAC | P-Forb | HONEWORT | | | | 3 | | | | |
| 1 | Cyperus erythrorhizos | -5 | OBL | A-Sedge | RED-ROOTED NUT SEDGE | | | | | 2-3 | | | |
| 0 | Cyperus esculentus | -3 | FACW | P-Sedge | FIELD NUT SEDGE | | 2-3 | 2 | | 2-3 | | | |
| 0 | DACTYLIS GLOMERATA | 3 | FACU | P-Grass | ORCHARD GRASS | | 3 | | 3 | | 3 | | |
| 0 | DAUCUS CAROTA | 4 | FACU- | B-Forb | QUEEN ANNE'S LACE | 3 | 4 | | 2 | 3 | 3 | | |
| 4 | Dioscorea villosa | 1 | FAC- | H-Vine | WILD YAM | | | | | | | | 2 |
| 0 | DIPSACUS LACINIATUS | 5 | UPL | B-Forb | CUT-LEAVED TEASEL | | 4-5 | | 2 | | | | |
| 6 | Dodecatheon meadia | 3 | FACU | P-Forb | SHOOTING STAR | | | | | | 1-2 | | |
| 0 | DYSSODIA PAPPOSA | 5 | UPL | A-Forb | FETID MARIGOLD | | 4 | | | | | | |
| 0 | ECHINOCHLOA CRUSGALLI | -3 | FACW | A-Grass | BARNYARD GRASS | 3 | 3 | 3 | | 2-3 | | 2 | |
| 2 | Eclipta prostrata | -3 | FACW | A-Forb | YERBA DE TAJO | | | | | | | 1-2 | |
| 0 | ELAEAGNUS ANGUSTIFOLIA | 4 | FACU- | Shrub | RUSSIAN OLIVE | | | 1 | 2 | | 2 | | 1 |
| 0 | ELAEAGNUS UMBELLATA | 5 | UPL | Shrub | AUTUMN OLIVE | | 3 | | 3-4 | 3 | | | 2 |
| 8 | Eleocharis palustris | -5 | OBL | P-Sedge | GREAT SPIKE RUSH | | | | | 2 | | 4 | |
| 4 | Elymus canadensis | 1 | FAC- | P-Grass | CANADA WILD RYE | | | | | | 2 | | |
| 3 | Epilobium coloratum | -5 | OBL | P-Forb | CINNAMON WILLOW HERB | | | | | | 2 | | |
| 0 | Equisetum arvense | 0 | FAC | Fern | COMMON HORSETAIL | | | | | 3 | | | |
| 2 | Erechtites hieracifolia | 3 | FACU | A-Forb | FIREWEED | | | | | 2 | | | 2 |
| 1 | Erigeron annuus | 1 | FAC- | B-Forb | ANNUAL FLEABANE | 3 | 3 | | | 3 | 3 | | |
| 7 | Eryngium yuccifolium | -1 | FAC+ | P-Forb | RATTLESNAKE MASTER | | | | | | 1-2 | | |
| 4 | Erythronium albidum | 5 | UPL | P-Forb | WHITE ADDER'S TONGUE | | | | 2 | | | | |
| 2 | Eupatorium altissimum | 3 | FACU | P-Forb | TALL BONESET | | 3 | | | | 3-4 | | |
| 4 | Eupatorium perfoliatum | -4 | FACW+ | P-Forb | COMMON BONESET | | | | | | | 2 | |
| 2 | Eupatorium rugosum | 3 | FACU | P-Forb | WHITE SNAKEROOT | | | | 3 | | | | |
| 1 | Eupatorium serotinum | -1 | FAC+ | P-Forb | LATE BONESET | | 2 | 2 | | 2-3 | | 3 | |
| 3 | Euthamia graminifolia | -2 | FACW- | P-Forb | GRASS-LVD GOLDENROD | | 2 | 2 | | 2 | | | |
| 0 | FESTUCA ARUNDINACEA | 2 | FACU+ | P-Grass | TALL FESCUE | | 5 | | 3 | | 3 | | |
| 2 | Fragaria virginiana | 1 | FAC- | P-Forb | WILD STRAWBERRY | | | | 3 | | | | 2 |
| 2 | Fraxinus pennsylvanica v. subintegerrima | -3 | FACW | Tree | GREEN ASH | | | | 4-5 | 4 | | | 3-4 |
| 0 | Galium aparine | 3 | FACU | A-Forb | ANNUAL BEDSTRAW | | | | 4 | | | | |
| 4 | Galium triflorum | 2 | FACU+ | P-Forb | SWEET-SCENTED BEDSTRAW | | | | 2 | | | | |
| 2 | Gaura biennis | 4 | FACU- | B-Forb | BIENNIAL GAURA | | 2 | | | | | | |
| 4 | Geranium maculatum | 3 | FACU | P-Forb | WILD GERANIUM | | | | | | | | 2-3 |

**Appendix 2 continued**

| C | Scientific Name | W | Wetness | Physiog. | Common Name | AOF | RA | AP | SW | SWM | PP | RM | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Geum canadense | 0 | FAC | P-Forb | WHITE AVENS | | | | 4-5 | | | | 4 |
| 2 | Geum laciniatum | -3 | FACW | P-Forb | ROUGH AVENS | | | | | 2 | | 2-3 | |
| 0 | GLECHOMA HEDERACEA | 3 | FACU | P-Forb | GROUND IVY | 3 | | | 4 | 3 | | | |
| 2 | Gleditsia triacanthos | 0 | FAC | Tree | HONEY LOCUST | | | | 3 | | | | |
| 0 | GLYCINE MAX | 5 | UPL | A-Forb | SOYBEAN | 4 | | | | | | | |
| 1 | Hackelia virginiana | 1 | FAC- | P-Forb | STICKSEED | | | | 3 | | | | 3 |
| 2 | Helianthus grosseserratus | -2 | FACW- | P-Forb | SAWTOOTH SUNFLOWER | | 2 | | | | | 2 | |
| 4 | Heliopsis helianthoides | 5 | UPL | P-Forb | FALSE SUNFLOWER | | | | | | 2 | | |
| 0 | HESPERIS MATRONALIS | 5 | UPL | P-Forb | DAME'S ROCKET | | | | 2 | | | | |
| 0 | HIBISCUS TRIONUM | 5 | UPL | A-Forb | FLOWER-OF-AN-HOUR | | 2 | | | | | | |
| 0 | HORDEUM JUBATUM | -1 | FAC+ | P-Grass | SQUIRREL-TAIL GRASS | | 3-4 | | | | | | |
| 5 | Hydrophyllum virginianum | -2 | FACW- | P-Forb | VIRGINIA WATERLEAF | | | | 1 | | | | |
| 3 | Hypericum punctatum | -1 | FAC+ | P-Forb | SPOTTED ST. JOHN'S WORT | | | | | | | | 1 |
| 5 | Isopyrum biternatum | 0 | FAC | P-Forb | FALSE RUE ANEMONE | | | | 1-2 | | | | |
| 4 | Juglans nigra | 3 | FACU | Tree | BLACK WALNUT | | | | 1 | | | | 1 |
| 4 | Juncus dudleyi | 0 | FAC | P-Forb | DUDLEY'S RUSH | | | | | 2-3 | | 3 | |
| 0 | JUNCUS COMPRESSUS | -5 | OBL | P-Forb | BLACK GRASS | | 2-3 | | | | | | |
| 0 | Juncus tenuis | 0 | FAC | P-Forb | PATH RUSH | | | | 3 | 3 | | | |
| 3 | Juncus torreyi | -3 | FACW | P-Forb | TORREY'S RUSH | | 2 | | | 2 | | 2 | |
| 1 | Juniperus virginiana | 3 | FACU | Tree | EASTERN RED CEDAR | | 3 | | 3 | | | | |
| 0 | LACTUCA SERRIOLA | 0 | FAC | B-Forb | PRICKLY LETTUCE | 3 | 3 | | | | | | |
| 3 | Leersia oryzoides | -5 | OBL | P-Grass | RICE CUT GRASS | | | 2 | | | | 3 | |
| 4 | Leersia virginica | -3 | FACW | P-Grass | WHITE GRASS | | | | 3 | | | | 2-3 |
| 3 | Lemna minor | -5 | OBL | A-Forb | SMALL DUCKWEED | | | 2 | | | | 3-4 | |
| 0 | Leptochloa fascicularis | -5 | OBL | A-Grass | BEARDED SPRANGLE TOP | | 4 | | | | | | |
| 0 | LEUCANTHEMUM VULGARE | 5 | UPL | P-Forb | OX-EYE DAISY | | 2 | | | | | | |
| 0 | LONICERA MAACKII | 5 | UPL | Shrub | AMUR HONEYSUCKLE | | 3 | | 4 | 4 | | | 3 |
| 0 | LONICERA TATARICA | 3 | FACU | Shrub | TARTARIAN HONEYSUCKLE | | 2 | | 3 | | | | |
| 0 | LONICERA X BELLA | 3 | FACU | Shrub | SHOWY FLY HONEYSUCKLE | | 3 | | 4 | | | | 2-3 |
| 0 | LYCHNIS ALBA | 5 | UPL | A-Forb | WHITE CAMPION | 2 | 2 | | | | | | |
| 3 | Lycopus americanus | -5 | OBL | P-Forb | COMMON WATER HOREHOUND | | | 2 | 3 | 2 | | 3 | |
| 4 | Lysimachia ciliata | -3 | FACW | P-Forb | FRINGED LOOSESTRIFE | | | | | 2 | | | 2 |
| 0 | LYTHRUM SALICARIA | -5 | OBL | P-Forb | PURPLE LOOSESTRIFE | | 2-3 | | | | | | |
| 0 | MALUS SIEBOLDII | 5 | UPL | Tree | JAPANESE CRAB | | | | | | 2 | | |
| 0 | MEDICAGO LUPULINA | 1 | FAC- | A-Forb | BLACK MEDICK | 3 | 4 | | | | | | |
| 0 | MELILOTUS ALBA | 3 | FACU | B-Forb | WHITE SWEET CLOVER | | 4 | 2 | | 3 | 4 | | |
| 0 | MELILOTUS OFFICINALIS | 3 | FACU | B-Forb | YELLOW SWEET CLOVER | | 4 | 2 | | 3 | 4 | | |
| 4 | Menispermum canadense | -1 | FAC+ | W-Vine | MOONSEED | | | | 2 | | | | 4 |
| 4 | Mentha arvensis v. villosa | -3 | FACW | P-Forb | WILD MINT | | | | | | | 2 | |
| 5 | Mimulus ringens | -5 | OBL | P-Forb | MONKEY FLOWER | | | | | 2 | | 2 | |
| 4 | Monarda fistulosa | 3 | FACU | P-Forb | WILD BERGAMOT | | | | | | 3 | | |
| 0 | MORUS ALBA | 0 | FAC | Tree | WHITE MULBERRY | | 3 | 1 | 3-4 | 3-4 | | | |
| 0 | NEPETA CATARIA | 1 | FAC- | P-Forb | CATNIP | 2 | | | 3 | | | | 2 |
| 6 | Nymphaea odorata | -5 | OBL | P-Forb | FRAGRANT WATER LILY | | | | | | | 3 | |
| 1 | Oenothera biennis | 3 | FACU | B-Forb | COMMON EVENING PRIMROSE | 3 | 3 | | | | 3 | | |
| 4 | Ostrya virginiana | 4 | FACU- | Tree | HOP HORNBEAM | | | | | | | | 2-3 |
| 0 | Oxalis stricta | 3 | FACU | P-Forb | TALL WOOD SORREL | 3 | 3 | 2 | 3 | | 2 | | 3 |
| 0 | Panicum capillare | 0 | FAC | A-Grass | OLD WITCH GRASS | | 2 | | | | | | |
| 4 | Panicum virgatum | -1 | FAC+ | P-Grass | PRAIRIE SWITCH GRASS | | 2 | | | | 3 | | |
| 2 | Parthenocissus quinquefolia | 1 | FAC- | W-Vine | VIRGINIA CREEPER | | 3 | | 4 | | | | 4 |
| 0 | PASTINACA SATIVA | 5 | UPL | B-Forb | WILD PARSNIP | | 3-4 | | | | 3-4 | | |
| 2 | Penthorum sedoides | -5 | OBL | P-Forb | DITCH STONECROP | | | | | | | 2 | |
| 0 | PHALARIS ARUNDINACEA | -4 | FACW+ | P-Grass | REED CANARY GRASS | | 3-4 | 3 | 3 | 5 | 2 | 4-5 | |
| 1 | Phragmites australis | -4 | FACW+ | P-Grass | COMMON REED | 3 | 4-5 | 2 | | | | | |
| 1 | Phyla lanceolata | -5 | OBL | P-Forb | FOG FRUIT | | | 2 | | 2 | | 3 | |
| 0 | PLANTAGO LANCEOLATA | 0 | FAC | P-Forb | ENGLISH PLANTAIN | | 4 | | | | 3 | | |
| 0 | Plantago rugelii | 0 | FAC | A-Forb | RED-STALKED PLANTAIN | | 3 | | 3 | 3 | | | |
| 0 | POA COMPRESSA | 2 | FACU+ | P-Grass | CANADIAN BLUE GRASS | | 3 | | 3 | | | | |

**Appendix 2 continued**

| C | Scientific Name | W | Wetness | Physiog. | Common Name | AOF | RA | AP | SW | SWM | PP | RM | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | POA PRATENSIS | 1 | FAC- | P-Grass | KENTUCKY BLUE GRASS | | 5 | 3 | 4 | 3 | 5 | | |
| 4 | Polygonatum commutatum | 3 | FACU | P-Forb | GREAT SOLOMON SEAL | | | | 1 | | | | |
| 3 | Polygonum amphibium | -5 | OBL | P-Forb | WATER KNOTWEED | | 2 | | | | | 3 | |
| 0 | Polygonum lapathifolium | -4 | FACW+ | A-Forb | CURTTOP LADY'S THUMB | | | | | | | 2 | |
| 1 | Polygonum pensylvanicum | -4 | FACW+ | A-Forb | PINKWEED | | 3 | | | 2 | | 2-3 | |
| 0 | POLYGONUM PERSICARIA | -3 | FACW | A-Forb | LADY'S THUMB | 3 | 3 | | | 3 | | | |
| 3 | Polygonum virginianum | 0 | FAC | P-Forb | VIRGINIA KNOTWEED | | | | 3-4 | | | | 3 |
| 8 | Pontederia cordata | -5 | OBL | P-Forb | PICKEREL WEED | | | | | | | 3 | |
| 2 | Populus deltoides | -1 | FAC+ | Tree | EASTERN COTTONWOOD | | 3 | | 3 | | | | 2-3 |
| 5 | Potamogeton pectinatus | -5 | OBL | P-Forb | COMB PONDWEED | | | | | | | 3 | |
| 7 | Potamogeton pusillus | -5 | OBL | P-Forb | BABY PONDWEED | | | | | | | 3-4 | |
| 0 | Potentilla norvegica | 0 | FAC | A-Forb | ROUGH CINQUEFOIL | | | 2 | | | | 2 | |
| 1 | Prunella vulgaris v. elongata | 0 | FAC | P-Forb | SELF-HEAL | | | | 3 | 3 | 3 | | |
| 3 | Prunus americana | 5 | UPL | Tree | AMERICAN PLUM | | 2 | | | | | | |
| 1 | Prunus serotina | 3 | FACU | Tree | WILD BLACK CHERRY | | 3 | | 4 | 3 | | | 3 |
| 3 | Prunus virginiana | 1 | FAC- | Shrub | COMMON CHOKE CHERRY | | | | | | | | 4 |
| 0 | PUCCINELLIA DISTANS | -5 | OBL | P-Grass | ALKALI GRASS | | 4 | | | | | | |
| 7 | Quercus bicolor | -4 | FACW+ | Tree | SWAMP WHITE OAK | | | | | | | | 3-4 |
| 5 | Quercus macrocarpa | 1 | FAC- | Tree | BURR OAK | | | | | | | | 2 |
| 5 | Quercus rubra | 3 | FACU | Tree | NORTHERN RED OAK | | | | | | | | 2 |
| 1 | Ranunculus abortivus | -2 | FACW- | A-Forb | LITTLE-LEAF BUTTERCUP | | | | 1-2 | | | | |
| 4 | Ranunculus septentrionalis | -4 | FACW+ | P-Forb | SWAMP BUTTERCUP | | | | 2 | | | | 3-4 |
| 4 | Ratibida pinnata | 5 | UPL | P-Forb | YELLOW CONEFLOWER | | | | | | 3 | | |
| 0 | RHAMNUS CATHARTICA | 3 | FACU | Shrub | COMMON BUCKTHORN | | 3-4 | | 4 | 3 | | | 4 |
| 0 | RHAMNUS FRANGULA | -1 | FAC+ | Shrub | GLOSSY BUCKTHORN | | 2 | | 3 | 3 | | | 2-3 |
| 1 | Rhus glabra | 5 | UPL | Shrub | SMOOTH SUMAC | | | | 2-3 | | | | 2 |
| 2 | Rhus typhina | 5 | UPL | Shrub | STAGHORN SUMAC | | | | | | | | 2 |
| 5 | Ribes americanum | -3 | FACW | Shrub | WILD BLACK CURRENT | | | | 3-4 | 2-3 | | | 2 |
| 2 | Ribes missouriense | 5 | UPL | Shrub | MISSOURI GOOSEBERRY | | | | 3 | | | | 1-2 |
| 4 | Rorippa palustris | -5 | OBL | A-Forb | MARSH YELLOW CRESS | | | | | 2 | | 2 | |
| 0 | ROSA MULTIFLORA | 3 | FACU | Shrub | JAPANESE ROSE | | | | 3-4 | 3 | 2 | | 2 |
| 2 | Rubus occidentalis | 3 | FACU | Shrub | BLACK RASPBERRY | | | | 3 | 3 | | | 3-4 |
| 2 | Rubus pensylvanicus | 1 | FAC- | Shrub | YANKEE BLACKBERRY | | | | 3 | | | | 3 |
| 0 | RUMEX CRISPUS | -1 | FAC+ | P-Forb | CURLY DOCK | 3 | 3 | | | 2 | | 2 | |
| 4 | Sagittaria latifolia | -5 | OBL | P-Forb | COMMON ARROWHEAD | | | | | 2 | | 2-3 | |
| 0 | SALIX ALBA 'TRISTIS' | 3 | FACU | Tree | WEEPING WILLOW | | | | 1 | | | | |
| 4 | Salix amygdaloides | -3 | FACW | Tree | PEACH-LEAVED WILLOW | | 2 | | 2-3 | | | | |
| 1 | Salix exigua | -5 | OBL | Shrub | SANDBAR WILLOW | | 3 | | 4 | 4 | | 4 | |
| 3 | Salix nigra | -5 | OBL | Tree | BLACK WILLOW | | | | 3 | | | 3 | |
| 2 | Sambucus canadensis | 4 | FACU- | Shrub | COMMON ELDER | | | | 2 | | | | 3 |
| 5 | Sanguinaria canadensis | 4 | FACU- | P-Forb | BLOODROOT | | | | | | | | 3 |
| 4 | Sanicula canadensis | 2 | FACU+ | B-Forb | CANADIAN BLACK SNAKEROOT | | | | 1-2 | | | | |
| 2 | Sanicula gregaria | -1 | FAC+ | P-Forb | CLUSTERED BLACK SNAKEROOT | | | | 3 | | | | 3 |
| 5 | Schizachyrium scoparium | 4 | FACU- | P-Grass | LITTLE BLUESTEM | | | | | | 3-4 | | |
| 6 | Scirpus acutus | -5 | OBL | P-Sedge | HEARD-STEMMED BULRUSH | | | | | | | 3 | |
| 3 | Scirpus americanus | -5 | OBL | P-Sedge | CHAIRMAKER'S RUSH | | 1-2 | | | 1-2 | | | |
| 4 | Scirpus atrovirens | -5 | OBL | P-Sedge | DARK GREEN RUSH | | 2 | | | 2 | | 3 | |
| 4 | **Scirpus paludosus** | -5 | OBL | P-Sedge | ALKALI BULRUSH | | 2 | | | | | | |
| 3 | Scirpus pendulus | -5 | OBL | P-Sedge | RED BULRUSH | | | | | 2 | | | |
| 4 | Scirpus tabernaemontanii | -5 | OBL | P-Sedge | GREAT BULRUSH | | 2 | 1 | | | | 3 | |
| 6 | Scutellaria galericulata | -5 | OBL | P-Forb | MARSH SKULLCAP | | | 1 | | | | | |
| 6 | Senecio plattensis | 4 | FACU- | P-Forb | PRAIRIE RAGWORT | | | | | | | 2 | |
| 0 | SETARIA FABERI | 2 | FACU+ | A-Grass | GIANT FOXTAIL | 3 | 3 | | | | | | |
| 5 | Silphium laciniatum | 4 | FACU- | P-Forb | COMPASS PLANT | | | | | | 3 | | |
| 4 | Silphium terebinthinaceum | 1 | FAC- | P-Forb | PRAIRIE DOCK | | | | | | 2-3 | | |
| 4 | Smilacina racemosa | 3 | FACU | P-Forb | FEATHERY FALSE SOLOMON SEAL | | | | 1-2 | | | | |
| 5 | Smilax ecirrhata | 5 | UPL | P-Forb | UPRIGHT CARRION FLOWER | | | | 2 | | | | |
| 3 | Smilax hispida | 0 | FAC | W-Vine | BRISTLY GREEN BRIER | | | | 1-2 | | | | |

**Appendix 2 continued**

| C | Scientific Name | W | Wetness | Physiog. | Common Name | AOF | RA | AP | SW | SWM | PP | RM | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | Smilax lasioneuron | 5 | UPL | H-Vine | COMMON CARRION FLOWER | | | | | | | | 2 |
| 0 | Solanum carolinense | 4 | FACU- | P-Forb | HORSE NETTLE | 3 | 3 | | | | | | |
| 0 | SOLANUM DULCAMARA | 0 | FAC | W-Vine | BITTERSWEET NIGHTSHADE | | 3 | | 2-3 | 2 | | | 2 |
| 0 | Solanum ptycanthum | 4 | FACU- | A-Forb | BLACK NIGHTSHADE | 3 | | | | 2 | | | 2-3 |
| 1 | Solidago canadensis | 3 | FACU | P-Forb | CANADA GOLDENROD | 3 | 4 | 3 | 3 | 3 | 3 | | 3-4 |
| 3 | Solidago gigantea | -3 | FACW | P-Forb | LATE GOLDENROD | | | 2 | | 3 | | | 2-3 |
| 4 | Solidago rigida | 4 | FACU- | P-Forb | RIGID GOLDENROD | | | | | | 3 | | |
| 0 | SOLIDAGO SEMPERVIRENS | -2 | FACW- | P-Forb | SEASIDE GOLDENROD | | 3 | | | | | | |
| 0 | SONCHUS ARVENSIS v. GLAB. | 1 | FAC- | P-Forb | FIELD SOW THISTLE | | 3-4 | | | 2 | | | |
| 4 | Sorghastrum nutans | 2 | FACU+ | P-Grass | INDIAN GRASS | | | | | | 3 | | |
| 5 | Sparganium eurycarpum | -5 | OBL | P-Forb | COMMON BUR REED | | | | | | | 3 | |
| 4 | Spartina pectinata | -4 | FACW+ | P-Grass | PRAIRIE CORD GRASS | | | | | | | 2 | |
| 0 | SPERGULARIA MEDIA | 3 | FACU | A-Forb | SALT SPURREY | | 3-4 | | | | | | |
| 0 | SUAEDA DEPRESSA | -3 | FACW | A-Forb | SEA BLITE | | 4 | | | | | | |
| 0 | TARAXACUM OFFICINALE | 3 | FACU | P-Forb | COMMON DANDELION | 3 | 3 | 2 | 3 | 3 | 3 | | |
| 3 | Teucrium canadense v. virginicum | -2 | FACW- | P-Forb | AMERICAN GERMANDER | | | | 2 | 2 | | | 2 |
| 5 | Tilia americana | 3 | FACU | Tree | AMERICAN LINDEN | | | | 2 | | | | 2-3 |
| 1 | Toxicodendron radicans | 3 | FACU | W-Vine | POISON IVY | | | | 4 | 4 | | | 4-5 |
| 0 | TRIFOLIUM HYBRIDUM | 1 | FAC- | P-Forb | ALSIKE CLOVER | | 3 | | | 2-3 | | | |
| 0 | TRIFOLIUM PRATENSE | 2 | FACU+ | P-Forb | RED CLOVER | | 3 | | | | | | |
| 0 | TRIFOLIUM REPENS | 2 | FACU+ | P-Forb | WHITE CLOVER | | 3 | | | | | | |
| 5 | Trillium recurvatum | 4 | FACU- | P-Forb | RED TRILLIUM | | | | 1 | | | | |
| 0 | TYPHA ANGUSTIFOLIA | -5 | OBL | P-Forb | NARROW-LEAVED CATTAIL | | 3-4 | | | | | 4-5 | |
| 5 | Ulmus americana | -2 | FACW- | Tree | AMERICAN ELM | | | | 3 | | | | 3-4 |
| 0 | ULMUS PUMILA | 5 | UPL | Tree | SIBERIAN ELM | | 3 | | 3 | | 1-2 | | |
| 0 | VERBASCUM THAPSUS | 5 | UPL | B-Forb | WOOLLY MULLEIN | | 3 | | | | | | |
| 3 | Verbena hastata | -4 | FACW+ | P-Forb | BLUE VERVAIN | | | | | 2 | | 2-3 | |
| 3 | Verbena urticifolia | -1 | FAC+ | P-Forb | WHITE VERVIAN | | | | 3 | | | 2 | |
| 5 | Vernonia fasciculata | -3 | FACW | P-Forb | COMMON IRONWEED | | | | | | 2 | | |
| 0 | VERONICA OFFICINALIS | 5 | UPL | P-Forb | COMMON SPEEDWELL | | 3 | | | | | | |
| 4 | Viburnum lentago | -1 | FAC+ | Shrub | NANNYBERRY | | | | 1-2 | 2 | | | |
| 0 | VIBURNUM OPULUS | 0 | FAC | Shrub | EUROPEAN HIGH-BUSH CRANBERRY | | | | 2 | | | | 2-3 |
| 6 | Viburnum recognitum | -2 | FACW- | Shrub | SMOOTH ARROWWOOD | | | | 2 | | | | |
| 1 | Viola pratincola | 0 | FAC | P-Forb | COMMON BLUE VIOLET | | | | 3 | | | | |
| 3 | Viola sororia | 1 | FAC- | P-Forb | WOOLLY BLUE VIOLET | | | | 3 | | | | |
| 2 | Vitis riparia | -2 | FACW- | W-Vine | RIVERBANK GRAPE | | 3 | | 4-5 | 4 | | | 5 |
| 6 | Wolffia braziliensis | -5 | OBL | W-Vine | NIPPLED WATER MEAL | | | | | | | 3-4 | |
| 5 | Wolffia columbiana | -5 | OBL | A-Forb | WATER MEAL | | | | | | | 3-4 | |
| 5 | Wolffia punctata | -5 | OBL | A-Forb | SPOTTED WATER MEAL | | | | | | | 3-4 | |
| 0 | Xanthium strumarium | 0 | FAC | A-Forb | COCKLEBUR | 2 | | | | 3 | | 2 | |
| 4 | Zanthoxylum americanum | 5 | UPL | Shrub | PRICKLY ASH | | | | | | | | 2-3 |

Wetland classification categories follow Reed (1988) for Region 3. Further details are from Taft et al. (1997). Plants are placed within one of five wetland indicator categories: Obligate Wetland (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Within any of these five categories, a "+" indicates that a particular taxon has a greater tendency to occur in wetlands while a "-" indicates a lesser tendency. Following this, indicator status categories, in descending order of probability of occurrence in wetland habitat to upland habitat, would be:

| | |
|---|---|
| -5 Obligate Wetland | (OBL) |
| -4 Facultative Wetland + | (FACW+) |
| -3 Facultative Wetland | (FACW) |
| -2 Facultative Wetland - | (FACW-) |
| -1 Facultative + | (FAC+) |
| 0 Facultative | (FAC) |
| +1 Facultative - | (FAC-) |
| +2 Facultative Upland + | (FACU+) |
| +3 Facultative Upland | (FACU) |
| +4 Facultative Upland - | (FACU-) |
| +5 Upland | (UPL) |